

NOTES ON SOME NEW ENGLAND PHORIDÆ
(DIPTERA)¹

BY CHARLES T. BRUES.

Among a small series of Phoridæ recently received for identification from Mr. C. W. Johnson there are two species of particular interest. One is a new species of *Apocephalus*, a genus known to develop as a parasite of ants, and the other a small wingless female of *Puliciphora* which appears during the winter months.

***Apocephalus borealis* sp. nov.** (Fig. 1, a, b, c,)

♀. Length, including ovipositor 2.2 mm. Pale yellow, the central portion of the abdomen with an orange tinge and the legs pale brownish yellow; first segment of abdomen brownish, with pale hind margin; second segment with a brownish blotch at the middle of the lateral margin; third and fourth each with a

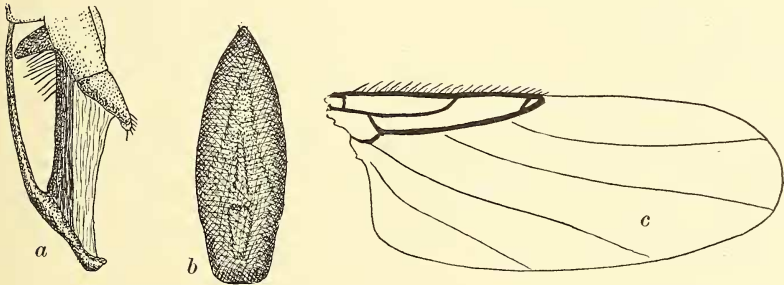


Fig 1. *Apocephalus borealis* sp. nov. a, apex of abdomen with ovipositor in lateral view; b, ovipositor in ventral view; c, wing.

larger darker spot; fifth entirely fuscous; sixth with the anterior angles brown; ovipositor brownish black, paler at tip, the membrane covering its upper side pale. Wings hyaline, venation pale fuscous. Front barely as high as wide; with only eight bristles below the ocelli; lowest row consisting of two reclinate

¹Contribution from the Entomological Laboratory of the Bussey Institution Harvard University, No. 234.

post antennal ones and a lateral one next to the eye, median pair of the row above further apart than the post-antennals, this row curved upwards at the sides with the lateral bristle rather close to the eye margin and nearer to one of the median bristles than these are to one another. Ocellar row of four. All bristles strong, subequal. Median frontal suture distinct; lower half of front with scattered minute black bristles. Post-ocular cilia moderate, but the upper one on each side much enlarged. Antennæ pyriform, obtusely pointed, as long as the front; arista no longer than the third joint, very stout, especially at base, nearly bare. Palpi rather broad, weakly bristled; cheeks each with two downwardly directed macrochætæ. Mesonotum sub-shining, with one pair of dorsocentral macrochætæ; scutellum with one pair of bristles, the lateral pair very minute, scarcely visible. Propleura with two slender bristles above the insertion of the coxa and two minute ones near the humeral angle; mesopleura bare. Front coxa with a noticeable stripe of minute bristles along the anterior edge; middle tibiæ not distinctly setulose; hind tibiæ with a line of very delicate, closely placed setulæ inside the posterior edge; all tarsi slender. Abdomen broad; second segment elongated, twice as broad as long, bare laterally; third to fifth segments gradually shorter, longer at the sides than along the median line; sixth longer and narrower, almost semicircular, with a few small marginal bristles medially at apex. Ovipositor of peculiar form; in dorsal view projecting beyond the sixth segment for a distance half the length of the abdomen; consisting of two chitinous pieces united at their apices, the upper one straight, issuing from the underside of the fifth and sixth segments and bearing below near the base a number of strong bristles; lower piece curved upward to meet the upper one and connected to it at the base by a large chitinous tooth originating at the extreme base of the upper piece. Viewed from the side (Fig. 1, A) the upper piece is seen to be nearly circular in section and the lower one greatly flattened; in ventral view (Fig. 1, B) the lower piece is spatulate, with truncate tip. Wing (Fig. 1, C) unusually narrow, costa not quite attaining the middle of the wing; first section of costa twice the length of the second; third very short, the minute second vein nearly per-

pendicular to the costa; fourth vein very slightly and evenly curved; fifth faintly bisinuate; sixth and seventh similarly sinuate; costal cilia rather long and set moderately close together.

Type from Salisbury Cove, Maine, July 17, 1913 (C. W. Johnson). It is deposited in the collection of the Boston Society of Natural History.

The distinguishing characteristics of this species may be indicated by the following tabular arrangement.

Key to the North American Species of Apocephalus (Females).

1. Front more than twice as wide as long, ovipositor narrowed to tip, without lateral enlargements . . . *wheeleri* Brues.
Front quadrate or nearly so 2.
2. Costal vein much less than half the length of the broad wing, with long, sparse fringe; ovipositor broad, with acuminate apex *spinicosta* Malloch.
Costal vein about half the length of the wing, which is not unusually broad; costal fringe shorter and more dense 3.
3. Ovipositor, in dorsal view, swollen near base and apex, with a constriction between *coquilletti* Malloch.
Ovipositor without lateral expansions, or with one at base only 4.
4. Scutellum with two marginal bristles, ovipositor with widely separated dorsal and ventral valves; wing very narrow; front entirely yellow *borealis* sp. nov..
Scutellum with the second pair of bristles present, though smaller; ovipositor without separated valves, wing broader 5.
5. Ovipositor with very strong lateral expansions near base where it is three times as wide as at tip . . *pergandei* Coquillet
Ovipositor with weak expansions at base which is twice as wide as the tip *similis* Malloch.

Two other North American species are known only in the male sex. *A. aridus* Malloch differs in having black halteres and a much more sparse costal fringe. *A. pictus* Malloch differs in having four subequal scutellar bristles and a black front.

Puliciphora glacialis Malloch

Proc. U. S. Nat. Mus., Washington, vol. 43, p. 507, figs. (1912).

Concerning the habits of this species there is appended to the original description of the minute wingless female, the remarkable note: " 'Active on the ice', Jan., 1874, Tyngsboro, Massachusetts (F. Blanchard)". As the genus *Puliciphora* and its relatives are typically tropical insects which extend only sparingly into temperate regions, I have been expectantly waiting for further information relating to this species. In the lot of Phoridae containing the *Apocephalus* described above there is a single additional female specimen of *Puliciphora glacialis* found by Mr. C. A. Frost at Framingham, Mass. on March 23, 1907 while sifting for beetles. Reference to the Monthly Weather Review for March 1907, shows that there was an unprecedented warm period in the eastern states from March 21st to 23rd and that a maximum temperature of 76° was recorded at Framingham. Such temporary warm spells during the winter are, of course, the occasion for the appearance of most "winter" or "snow" insects, such as *Boreus*, *Chionea*, etc. So far as *Chionea* is concerned, its closest relatives seem to be inhabitants of cold climates (*Pterochionea* Alexander, of the nearctic region), and the same appears to hold true for most typical snow-insects.

The present species of *Puliciphora* is more darkly colored and the abdominal plates are much more heavily chitinized than is usual in the genus. Structurally, however, it seems to be quite typical, even to the presence of the slit-like gland opening on the fifth abdominal segment.

This habit is not unprecedented in the family for there are quite a number of species known, especially among those that frequent carrion which are often taken during the colder spring and fall months. Thus, *Trupheoneura* and *Parastenophora* include a number of autumnal forms some of which probably hibernate as adults.